

**REMARKS**

This is in response to the first Office Action mailed April 25, 2005. The Office Action has been fully and carefully considered. As a result, Applicants have made the foregoing amendments and now offer the following remarks in support of the patentability of the claims.

Applicants note that new drawings were filed on March 22, 2002. Neither the Office Action mailed January 7, 2005 nor the Office Action mailed April 25, 2005 acknowledges on the Form PTOL-326 that those drawings are accepted. Applicants request acknowledgment of receipt and approval of the new drawings filed March 22, 2002.

**Interview Summary**

Applicants acknowledge with appreciation the interview granted Applicants' undersigned representative on June 16, 2005 and the courtesies extended to Applicants' representative at that interview. At the interview, the primary issues discussed were (1) the manner in which the deflector of the present invention substantially equalizes the mass flow rate of gases and (2) how the claimed invention distinguishes from the Noguchi, et al. patent (hereafter, Noguchi).

Applicants' representative explained that the matter of substantially equalizing the mass flow rate of gases can be visualized by reference to Fig. 3, for example. It was noted that it is known that engine exhaust tends to be somewhat erratic rather than a streamlined flow of fluid. As such, more flow along the line indicated as 150 in Fig. 3 at the top of the deflector 120 would tend to exert more forcefully on the upper

projection 365 and tilt the deflector about pivot 312. This in turn would permit and cause more flow along the line indicated as 150 in Fig. 3 at the bottom of the deflector 120 and bring the deflector surface back to equilibrium. Thus, the mass flow rate, or amount of mass per unit of time, would be equalized. It was pointed out that this is probably most concisely brought out on page 10 of the specification in paragraph 32.

With this explanation, it was pointed out that there is no adequate reason to raise an objection to the specification on this matter. In addition, the disclosure as a whole provides sufficient evidence that the inventor did indeed have possession of what is now being claimed when the application was filed. Thus the written description is adequate. Furthermore, since one skilled in the art clearly has sufficient information in the specification to reasonably understand the scope of the claims, the claims are not indefinite. Accordingly, both the specification and the claims are clear on this issue.

It was pointed out that Noguchi does not show a deflector. Valve 25 of Noguchi acts only to completely shut off flow at 48 or, alternatively, permit flow. No deflection occurs. It was emphasized that a valve cannot fairly be read as a deflector. Furthermore, the valve 25 of Noguchi, it was urged, could not serve in any way to equalize the mass flow rate of gases in the manner just previously explained.

The Examiner reserved final judgment and asked that the response make the explanation in writing. The Examiner also asked that Applicants point out the support in the specification for any amendments that are made.

Formal Matters Raised in the Office Action

The Office Action on page 2, paragraph 4, raises two issues characterized as informalities. Taking the second listed issue first, the spelling of “vane” has been corrected in paragraph 29. In addition, other typographical issues have been rectified in each of paragraphs 19, 23, 27, and 32

Turning now to the first listed issue, the Office Action states that “it is unclear as to what structure the deflector can be configured to substantially equalize the mass flow rate of the gases.” As clarification, the deflector can be configured as shown in Fig. 3 or in Fig. 4, for example.

Referring, for example, to Fig. 3, when incoming exhaust gas 150 approaches the leading surface 330, the gas deflects above and below the deflector as shown. If more gas engages protrusion 365 than engages protrusion 365', then the deflector pivots upwardly. As a result, more gas will then engage protrusion 365' and the deflector will then pivot downwardly. See, for example, paragraph 32 on page 10 of the specification. In this way, exhaust gas, which obviously may be somewhat erratically delivered due to the variances of engine operation, will tend to be balanced, or equalized, in volume and rate over the deflector surface. The mass flow rate of the gases, or amount of mass passing a given point in a unit of time, across the surface is thus substantially equalized. A desirable result of this is a tendency to fairly evenly distribute the flow of exhaust gases across the catalyst-coated substrate.

Referring, for example, to Fig. 4, when incoming exhaust gas 150 approaches the ellipsoid portion 400, the gas tends to be deflected over the surface 310 and along

the projection 365 equally. In a manner generally similar to operation of the deflector in Fig. 3, any occurrence of more gas flow on one side of the ellipsoid portion 400 would plainly result in more pressure against the projection 365 on that same side and cause self-centering. As discussed generally on page 11 of the specification in paragraph 33, spring loading may be used to help ensure that the deflector is normally centered.

Thus, in response to this formality objection, Applicants' response is that it is indeed clear how the deflector can be configured to substantially equalize the mass flow rate of the gases. Withdrawal of the objection is requested.

Claims 1-9 and 12-21 have been objected to because of certain alleged informalities. Applicants believe the claims are clear as they are. Nevertheless, these matters have been raised as objections plainly not related to the patentability of the claims, and Applicants have no objection to complying with the suggested changes except that Applicants have elected to simply delete the word "port" at its two occurrences in each of claim 1, line 3 and claim 12, line 3. Accordingly, all claims are consistent in their recitation of "inlet" and "outlet" rather than "inlet port" and "outlet port." In claim 8, "being" has been changed to "is" consistent with terminology used in other claims.

Rejection Under 35 U.S.C. 112, First Paragraph

Claims 1-9 have been rejected under 35 U.S.C. 112, first paragraph

as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, it is unclear as to what structure the deflector can be configured to

substantially equalize the mass flow rate of the gases across the at least one surface.

While the rejection does not explicitly make clear whether the Office is here concerned with written description (MPEP 2163) or with enablement (MPEP 2164), the language used plainly implicates the issue of written description since it questions whether the inventors had possession of the claimed subject matter at the time of filing.

Attention is invited to MPEP 2163.03. Therein it is stated that “there is a strong presumption that an adequate written description of the claimed invention is present in the specification as filed. *In re Wertheim*, 541 F.2d 257, 262, 191 USPQ 90, 96 (CCPA 1976).” Attention is also invited to MPEP 2163.04 wherein it is made clear that the “examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant’s disclosure a description of the invention defined by the claims. *Wertheim*, 541 F.2d at 263, 191 USPQ at 97.” Section 2163.04 then continues with specific guidance for formulation of a written description rejection.

In this case, the only support given in the Office Action for the rejection is a reformulation of what was stated earlier in the Office Action as a mere formality objection. Instead of evidence establishing the inventors’ lack of possession of the invention at the time of filing, there is only the statement that something is “unclear.” Accordingly, the Office has failed to set forth a proper *prima facie* case that the inventors lacked possession or that the application fails to satisfy the written description requirement. The fact that the Office is “unclear” about a particular matter may be sufficient to initially approach the matter by way of a formality objection, but it certainly is

not sufficient to meet the burden of the Office to establish a *prima facie* case based on the statute. Withdrawal of the rejection is in order and is respectfully requested.

Notwithstanding the impropriety of the rejection, Applicants respond essentially as they have responded above in answer to the formality objection and hereby incorporate by reference the remarks made in clarifying that issue. Moreover, the claims themselves stand as sufficient evidence of possession of the invention by the inventors at the time of filing, and therefore as sufficient evidence of adequate written description, inasmuch as they are original claims.

Rejection Under 35 U.S.C. 112, Second Paragraph

Claims 1-9, 16, and 17 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite. The specifics of this rejection appear in four short paragraphs following the initial statement of the rejection.

Attention is invited to MPEP 2173.02 for the essence of the definiteness requirement of 35 U.S.C. 112, second paragraph. Here, it is made plain that the issue is whether the claims meet the threshold requirements of clarity and precision, not whether more suitable language or modes of expression are available. What is required of the Applicants is that they set forth what they regard to be the invention with a reasonable degree of particularity and distinctness. This they have done.

The first issue raised in the rejection, once again, states "it is unclear as to what structural limitation is implied by 'the at least one deflector being configured to substantially equalize the mass flow rate of the gases . . . .'" Applicants maintain that the statement quoted by the examiner in the Office Action, read in the context of the

claim, in light of the specification, and from the perspective of the person having ordinary skill in the art, satisfies the threshold requirements of clarity and precision. MPEP 2173.02. The structure “implied” by the questioned recitation in claim 1 is any one of the structures that one skilled in the art would readily envision from a reading of the specification. As examples only, it can be the structure of the deflector shown in Fig. 3 or Fig. 4 as explained earlier in connection with the formality objection and the rejection under 35 U.S.C. 112, first paragraph.

The second issue raised in the rejection is the lack of clear antecedent basis for “the polygons” in claims 3 and 16. In this regard, Applicants maintain that “the polygons” have an inherent antecedent basis in the previous recitation of “a generally polyhedron portion” in each of claims 2 and 15 from which claim 3 and 16 respectively depend. See MPEP 2173.05(e). Moreover, in paragraph 19 on page 6 of the specification, Applicants have opted to be their own lexicographer as to the definition of the term “polyhedron” and stated that it “means a solid bounded by polygons” (MPEP 2111.02, III). Thus it stands irrefutable that the “polyhedron portion” recited in claims 2 and 15 provide the necessary antecedent basis for the “the polygons” of claims 3 and 16. Nevertheless, Applicants have amended claims 3 and 16, not for any failure to comply with the proper 35 U.S.C. 112, second paragraph, standard of reasonable clarity and precision, but merely to make explicit what was already implicit.

The third issue raised in the rejection is whether it is clear what structure is implied by “somewhat curved” in claims 4 and 17. Applicants maintain that this phrase raises no indefiniteness and that one skilled in the art would readily perceive what

structure is implied by the phrase. The word "somewhat" means "in some degree or measure" and is synonymous with "slightly" according to Merriam-Webster's Collegiate Dictionary, Eleventh Edition, at 1189. It seems unnecessary to turn to the dictionary for the definition of "curved." Thus "somewhat curved" implies a surface that is curved in some degree or measure. For example only, the deflector surface 310 shown in Fig. 3, instead of having a surface that is flat as shown, may be "curved" (page 6, line 9) or "somewhat curved" (page 7, line 5). The variants of flat or curved surfaces are repeatedly noted in the disclosure and claims 4 and 17 have been presented to particularly set forth the curved variant in language that comports with reasonable clarity and precision. Thus claims 4 and 17 comply with 35 U.S.C. 112, second paragraph, and raise no issue of indefiniteness.

The fourth issue raised in the rejection is whether it is clear what structural limitation is implied by "the at least one deflector being configured to selectively impede the flow of the gases . . ." recited in claim 8. Applicants maintain that this recitation is not in any way unclear. One skilled in the art would readily perceive that claim 8 is intended to embrace those deflector configurations that may selectively impede the flow of the gases. For example only, paragraph 27 of the specification bridging pages 8 and 9, and Fig. 2, disclose particular deflector configurations that may be used to impede the flow of gases. Claim 8, it is submitted, complies with the standard of reasonable clarity and precision and presents no issue of indefiniteness under 35 U.S.C. 112, second paragraph.



Rejection of Claim 12 for Anticipation

Claims 12 has been rejected under 35 U.S.C. 102(b) as being anticipated by Noguchi, et al. (U.S. Patent No. 3,968,645) (hereafter Noguchi). Applicants disagree that Noguchi serves as an anticipation of claim 12.

Noguchi discloses a mechanism that allows a large part of the hot exhaust gases to effectively bypass the catalyst when the engine operates under high load, while causing all the exhaust gases to pass through the catalyst chambers when the engine is under small load. This is best explained in column 4 of Noguchi from lines 5-44. The desired bypass in Noguchi is effected by way of a valve 25 that is selectively opened or closed to allow or not allow the gas to bypass the catalyst. The valve 25 is either open, to allow gas to flow through opening 48, or it is closed whereby all gas proceeds along the edge of chamber 40, through the catalyst 47, and then on through the exhaust system.

In order for a prior art reference to properly serve as an anticipation, the reference must disclose, either explicitly or inherently, each and every element of the claim in as much detail as is set forth in the claim. Where there is a difference between the prior art and the claim, there can be no anticipation.

Claim 12 requires, *inter alia*, a deflector. Manifestly, a deflector is an object or structure which serves to deflect. The Office Action characterizes the valve 25 of Noguchi as a deflector, while Noguchi plainly labels it a valve and discloses that it functions only in either of two positions - open or closed. Thus, it does not deflect at all. Rather, it merely shuts off flow through the opening 48, or it permits flow through

opening 48. Since the valve 25 of Noguchi is not properly characterized as a deflector, claim 12 cannot properly be said to be anticipated by Noguchi.

Nevertheless, claim 12 has been amended, commensurate with the disclosure, to recite “at least one deflector mounted to be movable by the flow of gases.” Support for this amendment can be found, for example, at page 10 of the specification in paragraph 31. Noguchi discloses only that the valve 25 is pivotally mounted and controlled manually. See column 3, lines 49-53. Obviously the valve is not mounted to be movable by the flow of gases. This amendment to claim 12 plainly eliminates any argument that the pivotally mounted valve 25 of Noguchi satisfies all the limitations of claim 12. Accordingly, reconsideration and withdrawal of the rejection of claim 12 as now amended is respectfully requested.

Alternative Rejections of Claims 1-9 and 13-21 for Anticipation and Obviousness

Claims 1-9 and 13-21 have been rejected alternatively under 35 U.S.C. 102(b) as anticipated by Noguchi or under 35 U.S.C. 103(a) as obvious over Noguchi. For the reasons set forth below, Applicants cannot agree with either of these two alternative rejections. The remarks to follow will first address the issue of anticipation and then the issue of obviousness.

The arguments presented above in connection with the rejection of claim 12 over Noguchi are applicable here. Succinctly stated, the valve 25 of Noguchi is not a “deflector” under the ordinary and plain meaning of the word. Valve 25, rather than deflect, acts only to permit flow or completely stop flow. There is no disclosure of a functioning deflector.

Additionally, to the extent the valve is being construed as a deflector, it is not “configured to substantially equalize the mass flow rate of the gases across the at least one surface as the gases flow through the at least one inlet into the housing and out of the housing through the at least one outlet” as required by claim 1. The Office Action hinges its conclusion of anticipation on the “112 rejection above” and the proposition that it “appears that the deflector of Noguchi et al is capable of equalizing the mass flow rate of the gases across the surface of the deflector.” However, Applicants refer back to the rebuttal of the rejections under 35 U.S.C. 112, first and second paragraphs, maintain that the meaning of claim 1 is reasonably clear and precise, and reject the notion that the valve 25 of Noguchi possesses any capability of equalizing the mass flow rate of the gases across the surface of the non-existent deflector. Noguchi fails to disclose each element of claim 1, or any of the other claims, and thus fails to anticipate.

Applicants note that this rejection (paragraph 16 of the Office Action) takes the sweeping position that “Noguchi et al discloses all of the elements recited in the instant claims and therefore meets the instant claims.” This statement in the rejection is apparently in support of the position of anticipation. However, as pointed out above, Noguchi fails to anticipate independent claims 1 and 12 for reasons already articulated, and for those same reasons, cannot anticipate the dependent claims.

On the issue of obviousness as it is addressed in the rejection in paragraph 16 of the Office Action, Noguchi does not disclose or reasonably suggest a “deflector” within the plain and ordinary meaning of the word, and Noguchi does not disclose a deflector configured to substantially equalize the mass flow rate of the gases as claimed. That

being the case, and since there is no further teaching from the prior art applied to supply this difference, there can be no proper conclusion of obviousness.

Within the body of the rejection, the Office Action separately and briefly addresses the limitations of claims 2-9 and 13-21. Suffice it to say at this point that the position taken in the Office Action with respect to these claims hinges on whether it is reasonable and fair to conclude that the valve 25 of Noguchi is a deflector that is mounted to be movable by the flow of gases (claim 12) or whether the valve of Noguchi is a deflector configured to substantially equalize the mass flow rate of the gases as claimed (claim 1). As has been explained above, the valve 25 of Noguchi will not suffice to satisfy the specified limitations. Accordingly, Applicants maintain that claims 2-9 and 13-21 define patentable subject matter by reason of their dependency from claims 1 or 12 as well as for the reason that they each individually set forth more specific details of the deflector. Regarding claims 9 and 21, it is just as unreasonable to refer to the arm 29 of Noguchi as a vane as it is to refer to the valve 25 as a deflector.

#### Conclusion

Applicants have set forth a summary of the recent interview graciously granted by the Examiner and responded substantively to each point of objection and rejection raised in the Office Action. In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

If after receipt and review of this response the Examiner is of the view that there are matters that may be resolved by a telephone call, the Examiner is invited to call the

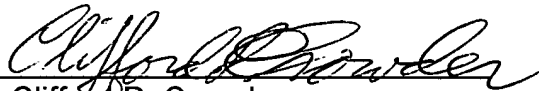
undersigned at 571-203-2757 in order that prosecution of this application may be expedited to a successful and mutually beneficial conclusion.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Dated: July 6, 2005

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